

Multi-scale coral reef and seascape habitat variables combine to influence reef fish assemblages

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Supplementary Tables and Figures:

Appendix Table 1. Average percent cover of benthic habitat at each site.

Site	Status	Rubble	Sand	Hard Coral	Macroalgae	EAM	Soft Coral
Bino-ongan	Fished	49%	9%	7%	24%	46%	8%
Bino-ongan	NTMR	19%	54%	3%	2%	33%	3%
Maite	Fished	11%	4%	42%	10%	20%	4%
Maite	NTMR	4%	8%	62%	3%	14%	4%
Nonoc	Fished	43%	27%	19%	13%	33%	2%
Nonoc	NTMR	12%	57%	19%	1%	18%	3%
Olang	Fished	56%	12%	17%	4%	62%	1%
Olang	NTMR	52%	11%	20%	15%	49%	1%
Paliton	Fished	9%	1%	37%	15%	22%	9%
Paliton	NTMR	5%	1%	28%	20%	23%	15%
Sandugan	Fished	34%	14%	21%	4%	35%	21%
Sandugan	NTMR	38%	22%	18%	1%	42%	9%
Tubod	Fished	1%	4%	60%	11%	15%	2%
Tubod	NTMR	2%	5%	27%	14%	22%	16%
Tulapos	Fished	52%	20%	3%	16%	44%	14%
Tulapos	NTMR	25%	16%	7%	11%	44%	17%

Appendix Table 2. Total area (km²) of each habitat within 500 meters of coral reef fish and benthic survey sites

Site	Status	Coral Reef	Sand	Macroalgae	Mangrove	Reef Flat	Seagrass	Total
Bino-ongan	Fished	0.095	0.064	0.026	0.007	0.012	0.122	0.326
Bino-ongan	NTMR	0.103	0.055	0.031	0.008	0.014	0.143	0.353
Maite	Fished	0.109	0.072	0.058	0.008	0.035	0.133	0.415
Maite	NTMR	0.084	0.078	0.072	0.008	0.039	0.100	0.380
Nonoc	Fished	0.052	0.018	0.018	0.002	0.038	0.044	0.172
Nonoc	NTMR	0.062	0.020	0.021	0.001	0.042	0.029	0.175
Olang	Fished	0.159	0.050	0.022	0.013	0.071	0.062	0.377
Olang	NTMR	0.110	0.069	0.018	0.012	0.085	0.068	0.362
Paliton	Fished	0.120	0.012	0.034	0.000	0.084	0.314	0.564
Paliton	NTMR	0.119	0.003	0.040	0.000	0.074	0.318	0.553
Sandugan	Fished	0.046	0.028	0.022	0.019	0.009	0.146	0.269
Sandugan	NTMR	0.037	0.033	0.023	0.006	0.008	0.165	0.271
Tubod	Fished	0.084	0.022	0.091	0.006	0.035	0.020	0.258
Tubod	NTMR	0.095	0.019	0.104	0.006	0.030	0.000	0.253
Tulapos	Fished	0.101	0.055	0.047	0.018	0.003	0.179	0.404
Tulapos	NTMR	0.103	0.062	0.033	0.049	0.011	0.188	0.446

Appendix Table 4. Pairwise post-hoc comparison tests from PERMANOVA analysis comparing the fish assemblage structure between habitat clusters for all species, parrotfishes, and wrasses. Bolded values are significant ($p < 0.05$) highlighting differing fish assemblages. P-values are bonferroni adjusted p-values. A.MG/A.Sand is the area of mangrove and area of sand cluster. Rubble/EAM is the cluster group defined by rubble and the epilithic algal matrix (EAM). Coral/A.MA is the cluster for live coral cover and area of macroalgae. A.SG/Soft Coral is the cluster for the area of seagrass and soft coral cover. A.CR/A.RF is the cluster for the area of coral reef and area of reef flat habitats.

Cluster Comparisons	All Species	Parrotfish	Wrasse
Area.MG/Area.Sand vs Rubble/EAM	0.01	0.02	0.08
Area.MG/Area.Sand vs Coral cover/Area.MA	0.01	0.01	0.01
Area.MG/Area.Sand vs Area.SG/Soft Coral	0.01	0.03	0.01
Area.MG/Area.Sand vs Area.CR/Area.RF	0.01	0.34	0.01
Rubble/EAM vs Coral cover/Area.MA	0.01	0.01	0.01
Rubble/EAM vs Area.SG/Soft Coral	0.01	0.16	0.43
Rubble/EAM vs Area.CR/Area.RF	0.01	1.0	0.37
Coral cover/Area.MA vs Area.SG/Soft Coral	0.01	0.01	0.01
Coral cover/Area.MA vs Area.CR/Area.RF	0.01	0.01	0.03
Area.SG/Soft Coral vs Area.CR/Area.RF	0.02	0.07	0.01